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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SCHINDLER, DAVID M

ART UNIT PAPER NUMBER

2862

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/708,926

Applicant(s)

FREDETTE ET AL.

Examiner

David Schindler

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-22, 35-37 and 39-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-22, 35-37 and 39-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/24/2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This action is in response to the communication filed 6/15/2006.

#### ***Election/Restrictions***

2. The Examiner notes that currently, the nonelected claims from the restriction requirement of the Office Action mailed 11/03/2005 stand withdrawn. However, the Examiner notes that the response to the restriction requirement filed 12/5/2005 by Applicant canceled the nonelected claims. Therefore, the Examiner is assuming that the nonelected claims stand canceled, and the Examiner notes that the status of the nonelected claims should be changed to canceled.

#### ***Response to Arguments***

3. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Allowable Subject Matter***

4. Upon further consideration, the previous indication of allowability of claims 18 and 21 is withdrawn in favor of the rejection found below.

#### ***Drawings***

5. Figures 3A and 3B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled

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"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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9. Claims 10-15, 17-19, 21, 22, 35, 36, and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (Clark) (5,359,324) in view of Meador et al. (Meador) (4,785,247).

As to Claim 10,

Clark discloses a propagation or induction resistivity antenna (205) disposed on an elongated tubular having a longitudinal axis and adapted for subsurface disposal ((Figure 2) and (Column 8, Lines 10-23)), a lateral resistivity sensor (207), a shield (213) disposed on the tubular to cover the lateral resistivity sensor (Figure 2), and an insulating mechanism including a circumferential gap (note the gap directly above (213) in Figure 2), the circumferential gap extending continuously about the tubular to prevent electric current flow in the shield in a direction parallel to the longitudinal axis of the tubular near the lateral resistivity sensor ((Column 8, Lines 10-58)).

Clark does not disclose a lateral resistivity sensor disposed in a recess in the elongated tubular.

Meador discloses a lateral resistivity sensor (21) disposed in a recess in the elongated tubular ((Figure 2B) and (Column 8, Lines 61-64)).

It would have been obvious to a person of ordinary skill in the art to modify Clark to include a lateral resistivity sensor disposed in a recess in the elongated tubular as taught by Meador in order to provide physical protection for the antenna (Column 7, Lines 34-37).

Note Applicant's Figure 3B with respect to Figure 2 of the above Clark reference as well as paragraph [0017] on page 10 of Applicant's specification.

As to Claim 11,

Clark discloses the lateral resistivity sensor includes a toroid (Column 8, Line 50).

As to Claim 12,

Clark discloses an electrode disposed on the tubular, the electrode include a button electrode ((Figure 2) and (Column 8, Line 59)).

As to Claim 13,

Clark discloses the lateral resistivity sensor includes an insulating base layer (211), and a toroidal antenna disposed over the insulating base layer ((Figure 2) and (Column 8, Lines 50-58)).

Clark does not disclose an insulating base layer disposed in the recess in the tubular.

Meador discloses an insulating base layer disposed in the recess in the tubular ((Figure 2B) and (Column 8, 65-68)).

It would have been obvious to a person of ordinary skill in the art to modify Clark to include an insulating base layer disposed in the recess in the tubular as taught by Meador in order to protect the coils from wear (Column 8, 65-68).

As to Claim 14,

Clark discloses the toroidal antenna includes a conductive wire disposed over the insulating layer (Column 8, Lines 50-53).

As to Claim 15,

Clark discloses the toroidal antenna includes a toroidal core formed from a magnetically permeable material (Column 8, Lines 13-19 and (50-53)).

Clark does not disclose the magnetically permeable material wrapped in the tubular recess.

Meador discloses the magnetically permeable material wrapped in the tubular recess (Column 12, Lines 2-11).

It would have been obvious to a person of ordinary skill in the art to modify Clark to include the magnetically permeable material wrapped in the tubular recess as taught by Meador in order to house and protect the coil assemblies (Column 12, Lines 8-11).

As to Claim 17,

Clark discloses the circumferential gap is a continuously extending gap incorporated in the shield (Figure 2).

Note that the Examiner is interpreting that the gap shown above the shield in Figure 2 is a part of the shield.

As to Claim 18,

Clark discloses the circumferential gap is filled with an insulating material (Figure 3).

As to Claim 19,

Clark does not explicitly disclose the circumferential gap includes an electrically insulating material disposed between a junction formed between the shield and the tubular.

However, the Examiner notes that Clark does appear to disclose the circumferential gap includes an electrically insulating material, and it therefore would have been obvious to rearrange the location of the circumferential gap, including

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disposing it between a junction formed between the shield and the tubular, so long as the gap was sufficient to prevent a short circuit (MPEP 2144.04).

As to Claim 21,

Clark does not disclose the recess contains both the induction or propagation resistivity antenna and the lateral resistivity sensor.

Meador discloses the recess contains both the induction resistivity antenna and the lateral resistivity sensor (Figure 2B).

It would have been obvious to a person of ordinary skill in the art to modify Clark to include the recess contains both the induction resistivity antenna and the lateral as taught by Meador in order to reduce the number of recesses required and to therefore reduce material waste, lower cost, and conserve space.

As to Claim 22,

Clark discloses the tubular is a drill collar (Figure 2).

As to Claim 35,

Clark discloses disposing a lateral resistivity sensor (207), disposing an induction or propagation resistivity antenna (205) on the tubular (Figure 2), positioning a shield assembly (213) on the tubular to cover the lateral resistivity sensor (Figure 2), extending a circumferential gap (note the gap directly above (213) in Figure 2) continuously about the tubular and electrically between the shield assembly and the tubular, thereby preventing electric current to flow along the shield in a direction parallel to the longitudinal axis of the tubular near the lateral resistivity sensor (Column 8, Lines 10-58).



Clark does not disclose disposing a lateral resistivity sensor in a recess in the tubular.

Meador discloses disposing a lateral resistivity sensor in a recess in the tubular ((Figure 2B) and (Column 8, Lines 61-64)).

It would have been obvious to a person of ordinary skill in the art to modify Clark to include disposing a lateral resistivity sensor in a recess in the tubular as taught by Meador in order to provide physical protection for the antenna (Column 7, Lines 34-37).

Note Applicant's Figure 3B with respect to Figure 2 of the above Clark reference as well as paragraph [0017] on page 10 of Applicant's specification.

As to Claim 36,

Clark discloses disposing the lateral resistivity sensor includes disposing a base layer of an insulating material (211) about the tubular, and assembling a toroidal antenna including a toroidal core and a conductive wire wound around the toroidal core, wherein the toroidal core includes a magnetically permeable material wrapped around the insulating layer ((Figure 2) and (Column 8, Lines 10-58)).

Clark does not disclose disposing a base layer of an insulating material in the recess of the tubular.

Meador discloses disposing a base layer of an insulating material in the recess of the tubular ((Figure 2B) and (Column 8, 65-68)).

It would have been obvious to a person of ordinary skill in the art to modify Clark to include disposing a base layer of an insulating material in the recess of the tubular as taught by Meador in order to protect the coils from wear (Column 8, 65-68).

As to Claim 39,

Clark discloses the circumferential gap is incorporated in the shield assembly and is filled with an insulating material (Figures 2 and 3).

Note that the Examiner is interpreting that the gap is a part of the shield assembly.

As to Claim 40,

Clark disposing an electrically insulating material (236) between a junction formed between the shield and the tubular (Figure 2).

As to Claim 41,

Clark does not explicitly disclose the circumferential gap is incorporated into the tubular and positioned between the shield and the tubular.

However, the Examiner notes that Clark does appear to disclose the circumferential gap includes an electrically insulating material, and it therefore would have been obvious to rearrange the location of the circumferential gap, including the circumferential gap is incorporated into the tubular and positioned between the shield and the tubular, so long as the gap was sufficient to prevent a short circuit (MPEP 2144.04).

10. Claims 16 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (Clark) (5,359,324) in view of Meador et al. (Meador) (4,785,247) as applied to claims 10 and 35 and in further view of Sinclair (6,100,696).

As to Claim 16,

Clark in view of Meador disclose as explained above.

Clark in view of Meador do not disclose the lateral resistivity sensor includes a pressure compensating mechanism.

Sinclair discloses the lateral resistivity sensor includes a pressure compensating mechanism ((Figure 1) and (Column 6, Lines 17-35)).

It would have been obvious to a person of ordinary skill in the art to modify Clark in view of Meador to include the lateral resistivity sensor includes a pressure compensating mechanism as taught by Sinclair in order to remove high pressure differentials from the sensor package (Column 6, Lines 30-32).

As to Claim 17,

Clark in view of Meador do not disclose adapting the recess in the tubular with a pressure compensating mechanism.

Sinclair discloses the use of a pressure compensating mechanism Figure 1) and (Column 6, Lines 17-35)).

It would have been obvious to a person of ordinary skill in the art to modify Clark in view of Meador to include adapting the recess in the tubular with a pressure compensating mechanism given the above disclosure and teaching of Sinclair in order to remove high pressure differentials from the sensor package (Column 6, Lines 30-32).

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (Clark) (5,359,324) in view of Meador et al. (Meador) (4,785,247) as applied to claim 10 and in further view of Wisler et al. (Wisler) (5,530,358).

Clark in view of Meador disclose as explained above.

Clark in view of Meador do not disclose a section of the shield positioned over the induction or propagation resistivity antenna includes at least one slot filled with an insulating material.

Wisler discloses he shield positioned over the induction or propagation resistivity antenna includes at least one slot filled with an insulating material ((Figures 2 and 3) and (Column 6, Lines 42-54)).

It would have been obvious to a person of ordinary skill in the art to modify Clark in view of Meador to include a section of the shield positioned over the induction or propagation resistivity antenna includes at least one slot filled with an insulating material as taught by Wisler in order to allow for the communication of electromagnetic energy between circumferential groove and the wellbore and surrounding formation (Column 6, Lines 51-54).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Schindler whose telephone number is (571) 272-2112. The examiner can normally be reached on M-F (8:00 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

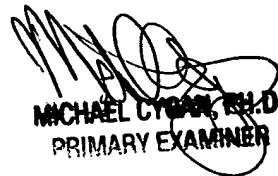
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David Schindler  
Examiner  
Art Unit 2862

DS



MICHAEL CYBARK, ESQ.  
PRIMARY EXAMINER